

REMARKS

Claims 1-22 are pending in this application. Claims 1-22 are rejected. Claims 1, 14 and 19 have been amended. No new matter has been added. It is respectfully submitted that the pending claims define allowable subject matter.

Claims 1-22 have been rejected under 35 U.S.C. § 102(b) as being anticipated by Pradere et al. (U.S. Patent 6,194,700). Applicant respectfully traverses the 35 U.S.C. § 102(b) rejection.

Pradere et al. describes a device with alteration means for conversion of an image using an image intensifier tube by providing a permanent test pattern on the intensifier tube, and more particularly, at an input window of the intensifier tube (abstract). In a first exemplary embodiment, to make the references of one test pattern, a support 20 comprises deformations 23. For example, the deformations 23 are grooves or holes (not through holes) located on the face of the support 20 which receives the radiation 17. At the position of these holes, the absorbent capacity of the support 20 is reduced. The result thereof is a modification of the image formed on the target 6. As a first variant, these hollow deformations 23 are replaced by other hollow deformations 24 made on the face of the support 20 in between this support 20 and the scintillator 19 (or the photocathode 5 which is curved). In this first variant, the resulting reduction of absorption is increased by the deformation, as the case may be, of the growth of CsI at this place. The resulting spot of the image is therefore increased. In a second variant, an input window 25 of the tube 4, formed by the part of the envelope 4 of the tube that faces the input face 18, comprises grooves or holes 26 fulfilling the same role as the holes or grooves 23 and 24 (column 4, lines 41-60). Further, the deformations may be replaced by deformations acting in the negative sense. For example, protuberances 27 may be made on the face of the support 20 that receives radiations 27. These protuberances may also be made on the internal face of the window 25 of the tube 4 (column 5, lines 1-6).

In another method for obtaining the test pattern, a window 28 is provided in the envelope 4 of the tube. The window 28 is outside the field of radiation to be converted. Through this window 28, a laser radiation 29 (essentially a single ray, especially if the source is not a laser source), produced for example by a laser source 30, illuminates the rear face of the photocathode 5. Under the effect of this illumination, it emits an electron radiation 31

revealing the place where it has been excited by the ray 29. It is possible to obtain a scanning of the rear of the photocathode 5 through the ray 29. Preferably, the emission of the source 30 will be pulsed (column 5, lines 25-36). Further, rather than illuminate the photocathode 5 by the rear, auxiliary light radiation may be let through by means of through holes 32 made throughout the thickness of the support 20 (column 5, lines 55-58). Additionally, a third mode of implementation of the comprises the making of a grid 33 whose shape perfectly matches the spherical shape of the input window 25. This grid 33 may slide in alternation on the input window 25. The principle of acquisition with this third mode consists in mobilizing the grid, for example making it shift during the useful shot. In this case, bars 34 of the grid 33 distribute their absorption effect throughout the image which is thereby affected uniformly. At the time of acquisition of the image of the test pattern, it is constituted by the grid 33 stopped in a particular position (column 5, line 59 to column 6, line 2).

Claim 1, as amended, recites a method for calibrating an X-ray imaging system comprising “configuring an output of a calibration image source in a pattern to define a calibration image.” Pradere et al. fails to describe or suggest a method as recited in amended claim 1. In particular, in contrast to claim 1, wherein the output of the calibration image source is in a pattern defining the calibration image, the image intensifier of Pradere et al. is modified to generate a test pattern. As described above, the test pattern is defined by deformations, such as grooves, holes, protuberances, and grids formed on the image intensifier, and in particular, at an input window, not at a calibration image source. The image intensifier of Pradere et al. must be modified to generate the test pattern unlike the method recited in claim 1 wherein the calibration image is defined at the output of the calibration image source having a pattern, and not at a surface of the image intensifier. Figures 3a-4b merely illustrate the different test patterns that may be generated by the deformations. Accordingly, Pradere et al. does not describe or suggest a method as recited in claim 1.

Claims 2-13 each depend from independent claim 1. When the recitations of claims 2-13 are considered in combination with the recitations of claim 1, Applicant submits that dependent claims 2-13 are likewise patentable over Pradere et al. for at least the same reasons set forth above.

Claim 14, as amended, recites a method for determining distortion in an X-ray imaging system comprising “generating a light pattern at an output of a calibration image

source within an image intensifier of an X-ray imaging system.” Pradere et al. fails to describe or suggest a method as recited in amended claim 14. In contrast to the method of claim 14, Pradere et al. describes using a laser source to pulse the rear face of a photocathode where the deformations are located, and as discussed in more detail above. Accordingly, Pradere et al. does not describe or suggest a method as recited in claim 14.

Claims 15-18 each depend from independent claim 14. When the recitations of claims 15-18 are considered in combination with the recitations of claim 14, Applicant submits that dependent claims 15-18 are likewise patentable over Pradere et al. for at least the same reasons set forth above.

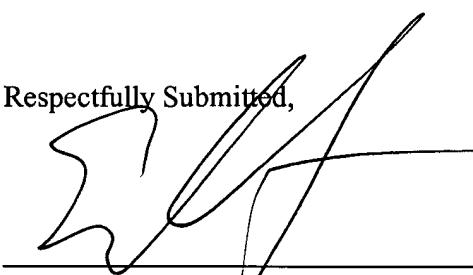
Claim 19, as amended, recites a system for determining distortion within an X-ray imaging device comprising “a calibration image source within an image intensifier configured to generate a calibration image pattern at an output of the calibration image source for use in determining distortion within the X-ray imaging device.” Pradere et al. fails to describe or suggest a system as recited in amended claim 19. As discussed in more detail above, Pradere et al. simply does not describe or suggest having a calibration image pattern at an output of a calibration image source within an image intensifier. Accordingly, Pradere et al. does not describe or suggest a system as recited in claim 19.

Claims 20-22 each depend from independent claim 19. When the recitations of claims 20-22 are considered in combination with the recitations of claim 19, Applicant submits that dependent claims 20-22 are likewise patentable over Pradere et al. for at least the same reasons set forth above.

For at least the reasons set forth above, Applicant respectfully requests that the 35 U.S.C. § 102 rejection of claims 1-22 be withdrawn.

In view of the foregoing amendments and remarks, it is respectfully submitted that the prior art fails to teach or suggest the claimed invention and all of the pending claims in this application are believed to be in condition for allowance. Reconsideration and favorable action is respectfully solicited. Should anything remain in order to place the present application in condition for allowance, the Examiner is kindly invited to contact the undersigned at the telephone number listed below.

Respectfully Submitted,



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